velopment of H_2S, causes fermentation of maltose, levulose, etc. There is an absence of mobility, spores and filaments, and given its property to form a lemon yellow pigment in all cultural media, he has given it the name of Scarcina, citrea conj., not to be confounded with the Scarcina citrina, which has entirely different properties.

From experiments made, he finds that it is found in the conj. with other cocci and bacilli; but that it has no special pathogenic importance for the human being, which is in keeping with all other scarcina thus far described; with the exception of that described by Nagano, which was only pathogenic for rat and rabbit.

A CASE OF MALIGNANT EDEMA.*

By JAMES EAVES, M. B., Ch. B. Edin., Lane Hospital, San Francisco.

On account of the unusual symptoms and difficulties in diagnosis I decided to present this case, thinking it might have an interest to those who had not seen it. Not to trespass too much on your time I will direct your attention to the principal points the case presents.

Patient D. G. (Dairyman), age 37. Family history, etc., negative.

Present History: Ten days ago patient assisted in skinning one of three cows. These cows had died the previous day of an unknown disease. As far as the patient remembers they displayed no symptoms before death, being apparently well and had no subcutaneous glandular enlargements. Five days ago the patient noticed three pimples on his left wrist; one over the dorsal aspect, one on the volar surface and one over the distal articular end of the radius. The following day patient noticed swelling commencing in the region of the wrist, extending to the hand a few hours later. Two days later the swelling extended to the forearm.

Pain: first set in two days after the swelling commenced and was in the arm entirely, being steady and sharp in character. Pain is not increased on slight movement.

The upper limb has a tense hot feeling to the patient.

When the swelling first commenced, patient applied a hot flax-seed poultice, which was followed by a serous bloody exudate from the pimples.

Physical Examination: Patient a well nourished man of 37 years. Facies pale and somewhat anxious. Left upper limb and hand swollen to about twice the normal size, being tense and brawny. On the volar surface are numerous bluish black blebs, averaging about a centimeter in diameter, raised from the surrounding surface about 1 cm. These blebs are not distinct from one another, their borders fusing and following in a general way the natural folds of the wrist. On the medial surface of the forearm and extending up on to the anterior surface are about 30 blebs averaging about 1½ cm. in diameter, hemispherical, pale, transparent and containing presumably a clear serous fluid. Movement of the elbow is only limited by the swelling, pain on attempted movement being very slight.

Glands: epitrochlear, axillary, etc., not palpable.

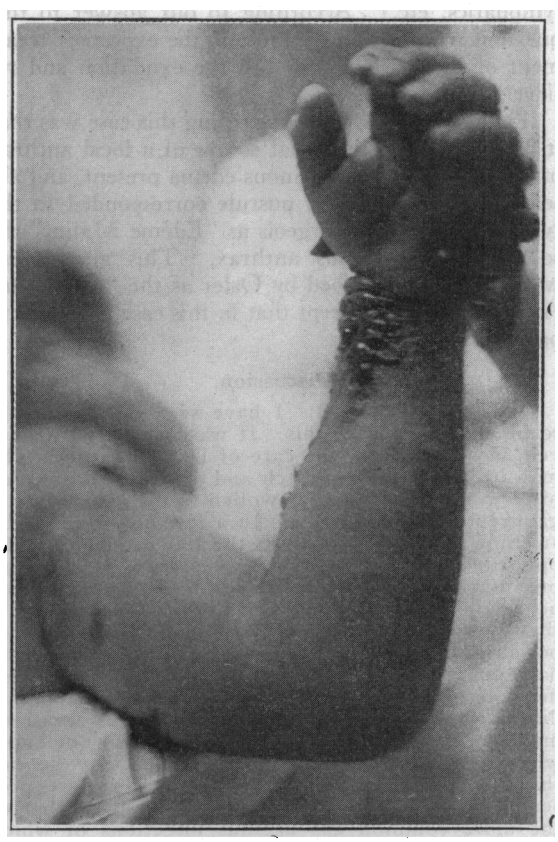
Palpation: no crackling but marked pitting on pressure, the patient complaining of pain.

Edema: since admission becoming markedly increased, extending to shoulders and chest.

Operation: by Dr. Stanley Stillman, at 5:30 the same day of admission. Tissues freely incised to deep fascia. Edema extending to a depth of three inches. No pus. Clear, watery fluid exuding. No glandular enlargements evident. Hot boracic fomentations applied and whole upper limb soaked in a bath of 1-10,000 bichloride 1 hour in 3.

Progress of the case: Pulse and temperature on the first day little affected. Second day, weak and rapid pulse and rise of temperature to 102°, remaining so until the end.

Visits: On repeated visits the patient was pale and anxious. Later stages exhibited a picture of collapse.



Before Operation.

Morning of demise pulse could not be felt. Patient did not seem entirely conscious and died in the early hours of the morning with no respiratory difficulty the eighth day of disease.

Postmortem Findings: The points at autopsy that I think of chief importance are the following:: Edema extended down between the muscles to bone; no gas; axillary lymph nodes swollen, the largest being about the size of a small hazel nut; no hemorrhages.

Bacteriological Report: Fluid taken from blebs on wrist time of admission—fluid taken from incised wounds, etc., all negative. Bacillus of anthrax first isolated from smears from the axillary nodes.

* Read before the Cooper College Science Club, Nov. 6, 1911.

Commentary.

The patient did not suffer any evident distress. His memory remained clear throughout. No nausea or headache but exhibited to a degree a picture of shock. The blisters suggested the possibility of the case being one of malignant pustule, but this was rendered improbable by the failure to find the anthrax bacillus in the fluid of the blebs. It was a striking fact that with such marked objective signs there were so few subjective symptoms, i. e., the general symptoms did not bear any relation to the severity of the initial lesion, the general infection being to all intents and purposes slight.

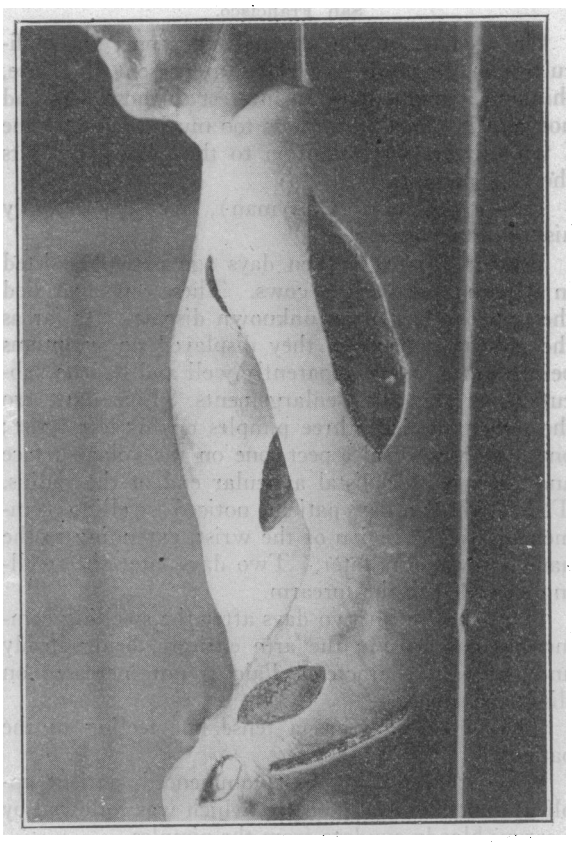
Edema: This is a question to which I would like to call your attention. Should we look upon this edema as being a reactive process injurious to the bacilli already present and unfavorable to their further development, or was it a passive edema arising from injury to the capillaries, blocking of lymphatics, etc.? According to our answer to this question we should either follow the expectant treatment or by incisions diminish the exudation and relieve the pressure.

The noteworthy point regarding this case was that it did not follow the usual course of a local anthrax infection but in the enormous edema present, and absence of any malignant pustule corresponded to the type described by Bourgeois as "Edème Malin," the so-called erysipelatous anthrax. This also agrees with the type described by Osler as the "Malignant Anthrax Edema" except that in this case vesicles and papules were present.

Discussion.

Dr. Emmet Rixford: I have seen only one case to be compared with this. It was in 1892 in Roosevelt Hospital under the care of Dr. McBurney. The man had received a scratch and 48 hours afterwards his arm was enormously swollen to the shoulder and gangrenous to the elbow. In a few hours more the swelling had extended from the left shoulder to the opposite shoulder. The skin was somewhat reddened but in this case of Dr. Eaves there was little or no redness of the skin. Dr. Stillman has just said that possibly this edema was protective and that possibly his very free incisions relieving the edema hastened the patient's end. I would say that these incisions made by Dr. Stillman were of homeopathic dimensions compared to the tremendous incisions made by Dr. McBurney in his case. I do not know whether Dr. McBurney's patient died any sooner than Dr. Stillman's did. The clinical picture presented by these cases is very different from that of the more common gas bacillus infections of which I have seen a number. In one case the interesting thing was that the point of infection was within the patient's own anus; there was a small tear, apparently a rectal fissure, and from that extended the gas bacillus infection to the perineum and groin, following up the course of the lymphatics on both sides. The scrotum sloughed completely and although we made very extensive incisions and cleaned out the area very widely the patient lived but 2 days. Another case of this kind was that of a Chinese whose leg was amputated by a street car. In this case the crepitation extended to the middle of the thigh within 24 hours. I amputated at the upper margin of the edema but put in no stitches, merely ligating the vessels, and left the wound gaping and washed it with saturated solution of salicylic acid in hot alcohol. I did that because I saw a case in which Dr. L. L. McArthur of Chicago had done it; it was a case of gas bacillus infection of the thigh, where after excising a wide area he had washed the wound with saturated salicylic acid in hot alcohol and packed the wound with gauze saturated with the same solution. My patient recovered. In another case of gas bacillus infection of a compound fracture of the leg free incision resulted in recovery. In two other cases, similar incisions had no effect in staving off the death.

Dr. Wm. Ophuls: This case is very interesting. I saw the man clinically and from the clinical picture an infection with ordinary gas bacillus could be excluded for the reason that there was not any trace of gas in his tissue. However, it is possible that there may be infections with anaerobes with which there is not gas formation in the tissues. This is true in regard to cattle, where in black leg we may find no gas in the tissues and still get tremendous edema. From the apparently initial lesion it was impossible to obtain any growths, and although naturally from the history we thought of the possibility of anthrax, still we were of the opinion that we might exclude it on account of the absence of all signs of malignant pustule. Even at autopsy we



Post-mortem.

had quite a little time discovering the real cause of the trouble. Careful examinations were made of the edematous tissues as well as that obtained from the muscle and still we were not able to find any bacteria. Then we found some large Gramm positive rods in some of the smears and came to the conclusion that we had to deal with one of the anaerobes and some unusual type of malignant edema. Some of the material, however, was sent to the Bacteriological Laboratory at Stanford and we received the report that the anthrax bacillus had grown quite typically. Later it was definitely shown that these bacilli were anthrax. It produced typical lesions in guinea pigs and other animals. There is no doubt, however, that this is an anthrax infection of an unusual type.

Dr. Leo Eloesser: It has often struck me that the pictures that we see of infections in California are different to those described in the text books and those seen in the clinics abroad. I saw a case similar to Dr. Eaves' at the City and County Hos

pital a year and a half ago. The patient had been admitted under the diagnosis of erysipelas and I was called in to do a tracheotomy. He was asphyctic and comatose, but the trachea was free, so that I did not do anything; the man was moribund at the time and died about 6 hours afterwards. There was subcutaneous edema all over the upper part of his body. The edematous fluid showed a Gramm positive bacillus in great numbers which grew readily in aerobic cultures. I showed it to Dr. Ophuls and he said that it could not be malignant edema. I suppose that it was one of those erysipelatoid forms of anthrax. He had no initial pustule or lesion that I could discover.

Dr. James Eaves: In the treatment of such cases two divergent methods have been followed; the majority consider that prompt and extensive incision offers the only hope. Müller on the other hand regards the edema as a purely defensive process which should not be interfered with and recommends fixation of the limb and general stimulating treatment. He fears incision as likely to give rise to a general infection; the pathological facts on which he bases the expectation have, however, lately been called in question. In cases where there is a pustule, early excision is the only way. We had a number of cases of malignant pustule at Guy's Hospital, and excision combined with the use of Sclavo's serum gave excellent results.

MULTIPLE PAPILLOMATA OF THE LARYNX IN CHILDREN—REPORT OF TWO CASES.*

By E. C. SEWALL, M. D., San Francisco.

I wish to report two cases which have come under my care in the past few years, first because of their comparative rarity and second because of the ease with which the latter case was handled as compared to the former due to the improvement in technic which a very short time has brought to our aid.

R. C., aged 5 years, was brought to me in 1905. He was apparently in perfect health, but had suffered for years with "croup," hoarseness and increasing dyspnea. The family history was negative; both parents were healthy; he was an only child. The attacks of croup which he had were becoming more severe and during them he would only get his breath with the greatest difficulty. The hoarseness, which was marked, was becoming worse, so the voice was only a whisper, and at times even failed altogether. Examination showed a well-nourished child with no abnormality except the condition to be described in the larynx. This was filled with a papillomatous growth of a cauliflower nature somewhat pale, seedy, appearance, friable, which grew from both cords and the commissure. There remained only a small, irregular chink through which the child breathed. Three methods of procedure were carefully considered. Laryngotomy, or opening of the larynx externally and removal of the growths was rejected because of the probability of the subsequent return of the neoplasm.

Tracheotomy was not advised because that could always be done as a last necessity.

Removal of the growth through the mouth with laryngeal mirror and forceps presented great difficulty on account of the age of the child. Direct removal of growths through the Killian tubes had hardly been more than attempted at that time.

The condition of the child demanded relief; he was in constant danger of asphyxiation. Naturally I turned toward the most simple method, i. e.: removal through the mouth with forceps under guidance of mirror. After an educative course of some days I was able to remove a large bit of the growth and repeating the sittings was able to send the child home breathing fairly well. He was back again in some few months, however, and the performance had to be repeated. The growths occupied the larynx again as they did subsequently a number of times after being removed as well as I was able.

I was, however, now fairly certain that I could keep the child breathing until an age when the recurrence would not take place. Pathological examination showed the growths simple papillomata. The case at this juncture passed out of my hands as I left for Europe. The subsequent history is instructive. A laryngotomy was performed, the growths thoroughly removed and their base carefully cauterized. The opening of the larynx was successful in every way and healing was uneventful. However, the growths very quickly returned and then a tracheotomy was done. I saw him about a year later and he was in perfect health but wearing the tracheotomy tube.

The second case is that of a girl aged 14, also from one of the interior towns, being referred to me by Dr. Gould of Sonora. She came in September, 1911. Family history negative; again an only child. The duration of the trouble somewhat indefinitely given, but difficulty in breathing increasing gradually was becoming quite distressing. Complete loss of voice except for whispered sounds. Examination showed a healthy, normal child well developed but slightly anemic. The larynx showed the only abnormality containing several wart-like growths, mostly from the right vocal cord and anterior commissure. They were typically papillomata in appearance. Profiting by my experience with case 1, I began to train her for removal with forceps and mirror, but after a month of faithful daily practice I was unable to get her to hold still. I then gave her an anesthetic and with Killian laryngeal spatula fitted to the Brunnings handle and with the Brunnings forceps I removed the growth quickly, easily and cleanly. There was practically no bleeding, adrenaline and cocain having been sprayed directly on the growth and cords. The growth was a typical papilloma. When the patient emerged from the anesthetic she could produce a true voice sound but the following few days she remained in my care she was still whispering, due to the swelling and edema, possibly, though this was inconsiderable. There certainly was some change in the cords themselves, they were not normal in appearance and this condition may be associated with such growth though I find no reference to it in the literature at hand. Dr. Graham kindly assisted me at the operation. In this case the removal was accomplished with certainty and ease. I feel that the child can be saved more mutilating operations even though repeated removal of the growths through the tube be necessary.

The cause of these growths is not known. Irritation, that cause of hypertrophy of tissue, would seem to play no part in some cases as such growths have been demonstrated present at birth. The growths usually have their location on the true cords at the anterior ends and commissure. Rarely in the arytenoid region. The symptoms are interference with voice and respiration and general impairment of health such as the latter would suggest. The frequency of these recurring papillomatous growths in children is difficult to ascertain. "In a period of 10 years in the clinic of Dr. Chappell at the Manhattan Eye, Ear and Throat there was only one case. In another clinic in the same institution there were two cases in the same period." "Clark reports 12 cases in the Massachusetts hospital in the examination of 12,623 children under 14 years of age." "In 300 tumors of the larynx reported by Favel 206 were

* Read before the California Academy of Medicine, Nov. 27th, 1911.